



FASCIA SCIENCE AND CLINICAL APPLICATIONS: RANDOMIZED, CONTROLLED, SINGLE BLINDED TRIAL

## Effectiveness of Myofascial release in the management of chronic low back pain in nursing professionals



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Received 2 February 2013; received in revised form 24 April 2013; accepted 5 May 2013

### KEYWORDS

Myofascial release;  
Specific back  
exercises;  
Chronic low back pain

**Summary Objective:** To investigate whether Myofascial release (MFR) when used as an adjunct to specific back exercises (SBE) reduces pain and disability in chronic low back pain (CLBP) in comparison with a control group receiving a sham Myofascial release (SMFR) and specific back exercises (SBE) among nursing professionals.

**Design:** Randomized, controlled, single blinded trial.

**Setting:** Nonprofit research foundation clinic in Kerala, India.

**Participants:** Nursing professionals ( $N = 80$ ) with chronic low back pain (CLBP).

**Interventions:** MFR group or control group. The techniques were administered by physiotherapists certified in MFR and consisted of 24 sessions per client over 8 weeks.

**Main outcome measure:** The McGill Pain Questionnaire (MPQ) was used to assess subjective pain experience and Quebec Back Pain Disability Scale (QBPDS) was used to assess the disability associated with CLBP. The primary outcome measure was the difference in MPQ and QBPDS scores between week 1 (pretest score), week 8 (posttest score), and follow-up at week 12 after randomization.

**Results:** The simple main effects analysis showed that the MFR group performed better than the control group in weeks 8 and 12 ( $P < 0.005$ ). The patients in the MFR group reported a 53.3% reduction in their pain and 29.7% reduction in functional disability as shown in the MPQ and QBPDS scores in week 8, whereas patients in the control group reported a 26.1% and 9.8% reduction in their MPQ and QBPDS scores in week 8, which persisted as a 43.6% reduction of pain and 22.7% reduction of functional disability in the follow-up at week 12 in the MFR

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group compared to the baseline. The proportion of responders, defined as participants who had at least a 50% reduction in pain between weeks 1 and 8, was 73% in the MFR group and 0% in the control group, which was 0% for functional disability in the MFR and control group. *Conclusions:* This study provides evidence that MFR when used as an adjunct to SBE is more effective than a control intervention for CLBP in nursing professionals.

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## Introduction

Work related chronic low back pain (CLBP), poses a major health and socioeconomic problem in modern society. It has been shown that 60–80% of the general population suffers from low back pain at some time during their lives (Maul et al., 2003). The 1-year incidence of chronic low back pain has ranged between 4% and 14% (Lake et al., 2000; Kopec et al., 2004). Freburger et al. (2009) showed an increasing prevalence of chronic impairing low back pain over a 14-year interval from 3.9% in 1992 to 10.2% in 2006 – an overall increase in the prevalence of low back pain of 162% with an annual increase of 11.6%. Among nurses the lifetime prevalence was found to be slightly higher, varying between 73% and 90% (Maul et al., 2003; Knibbe and Friele, 1996; Smedley et al., 1995). Despite these high prevalences, the etiology and the nature of CLBP have not yet been fully understood. Many studies have been performed in various occupational settings, indicating a strong association between musculoskeletal disorders and work related factors (Bernard, 1997). This was also found among nurses (Lagerström et al., 1998). The contribution of psychosocial factors (Bongers et al., 1993; Thorbjörnsson et al., 1998) and work pressure (Engels et al., 1996) was also evident, but not as clear as that has been shown for the physical factors. It has been reported that the majority of chronic pain patients without spinal pathology have evidence of musculoskeletal dysfunctions, and that remediation of these disturbances leads to reduced pain in many of the patients (Rosomoff et al., 1989).

Few longitudinal studies have been carried out focusing on the course of low back pain (LBP). In the clinical context, chronic LBP is defined as LBP lasting more than three months. Longitudinal studies found previous LBP to be a predictor of subsequent complaints (Biering-Sørensen, 1983; Thorbjörnsson et al., 1998). This is confirmed by results of a five year follow up study indicating that previous back injury was a significant predictor of subsequent low back injury among nurses (Maul et al., 2003; Heap, 1987). Conversely other authors reported no association between previous and subsequent LBP (Astrand and Isacson, 1988). However, Abenheim et al. (1988) found that 67% of the total number of episodes reported by nurses within a three year follow up were recurrences. They suggested the presence of a link between subsequent episodes, which could be partly due to an increased sensitivity of a previously injured spine.

Given these trends, an interest has emerged in the role of manual medicine in the treatment of low back pain. Myofascial release (MFR) is a form of manual medicine which involves the application of a low load, long duration

stretch to the myofascial complex, intended to restore optimal length, decrease pain, and improve function (Barnes, 1990). It has been hypothesized that fascial restrictions in one part of the body cause undue tension in other parts of the body due to fascial continuity. This may result in stress on any structures that are enveloped, divided, or supported by fascia (Schleip, 2003). Myofascial practitioners believe that by restoring the length and health of restricted connective tissue, pressure can be relieved on pain sensitive structures such as nerves and blood vessels. MFR generally involves slow, sustained pressure (120–300 s) applied to restricted fascial layers either directly (direct technique MFR) or indirectly (indirect technique MFR). Direct technique MFR is thought to work directly on restricted fascia; practitioners use knuckles or elbow or other tools to slowly sink into the fascia, and the pressure applied is a few kilograms of force to contact the restricted fascia, apply tension, or stretch the fascia. Indirect MFR involves application of gentle stretch- the pressure applied is a few grams of force, and the hands tend to follow the direction of fascial restriction, hold the stretch, and allow the fascia to ‘unwind’ itself. The rationale for these techniques can be traced to various studies that investigated plastic, viscoelastic, and piezoelectric properties of connective tissue (Schleip, 2003; Greenman, 2003; Pischinger, 1991).

MFR is being used to treat patients with back pain, but there are few formal reports of its efficacy. The technique used in this study is the direct MFR technique, as promoted by Stanborough (2004). The primary objective of the present study was to evaluate the efficacy of MFR in the management of CLBP in nursing professionals, treating fascia in the lower back in accordance with the fascial meridians proposed by Myers (2009). Clinically, manual therapy is often combined with exercises that are tailored to treat specific musculoskeletal dysfunctions (Bookhout, 1996). Although the utility of specific exercises for treating CLBP has received little empirical attention, a review of the literature by van Tulder et al. (2000) strongly supporting the notion that exercise therapy is more effective than usual care by a practitioner and/or conventional physical therapy. Aure et al. (2003) examined the impact of manual and exercise therapy in persons with chronic, disabling low back pain. The authors found significant improvements in both groups on measures of pain and disability, with the manual therapy group displaying significantly greater gains.

## Methods

This study was carried out in the clinical wing of Myofascial Therapy and Research Foundation, Kerala, India. Inclusion

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